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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,872	03/04/2004	Sung Chol Yang	1594.1375	5243

21171 7590 12/28/2005

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EXAMINER
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LEUNG, PHILIP H

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/791,872	<b>Applicant(s)</b> YANG, SUNG CHOL	
	<b>Examiner</b> Philip H. Leung	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-13 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. At the outset, as recognized by the applicant from the content of the rejection under 35 USC 103 in the previous Office action, Cecil (US 5,831,235) should not have been cited in the heading of the rejection. The inclusion of the reference to Cecil (US 5,831,235) was indeed an error due to an inadvertent editing problem. Any inconvenience caused the applicant is sincerely regretted.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being obvious over Lee (US 5,090,613) (previously cited) or Kurokuzuhara (JP 63-271845) (previously cited by the applicant).

Lee shows a magnetron for microwave ovens, comprising: an anode cylinder 2; a plurality of vanes 10 arranged in a radial direction inside of the anode cylinder, each of the vanes being plated with brazing material; one or more rings 12 to connect with the plurality of the vanes and to electrically connect the plurality of vanes to each other; and an antenna 6 connected to one of the plurality of vanes and radiating microwaves generated from the plurality of vanes, wherein each of the vanes is brazed to one or more of the anode cylinder, of the one or more

Art Unit: 3742

rings and of the antenna. Similarly Kurokuzuhara also shows a magnetron and the method of making a magnetron comprising: an anode cylinder 1; a plurality of plate-shaped vanes 2 radially arranged along an inside surface of the anode cylinder 1; one or more strap rings 4 to electrically connect the plurality of the vanes to each other; and an antenna 5 connected to one of the plurality of vanes to radiate microwaves generated from the vanes; wherein each of the vanes is plated with a brazing material to be brazed to one or more of the anode cylinder, of the one or more strap rings and of the antenna (see Figures 1-3 and the English abstract). Therefore, Lee or Kurokuzuhara shows every feature as claimed except for the explicit showing of the plating depth of the brazing material. However, it is a basic engineering principle to determine an optimal amount of brazing material to use to obtain an acceptable brazed product with minimum cost. It is well known that the amount is a tradeoff between cost and quality of the brazing operation and brazing materials, such as silver, are very expensive, it would have been obvious to one of ordinary skill in the art to modify Lee or Kurokuzuhara to use just enough of the brazing material for a good brazing process in order to keep the cost at the minimum. The exact amount can be easily determined by an ordinary artisan through routine trial and error experimentation.

4. Applicant's arguments filed 10-20-2005 have been fully considered but they are not persuasive. As set forth above, Lee or Kurokuzuhara shows a magnetron having every feature as claimed except for the exact plating depth as claimed. However, it is still the examiner's position that it is within the fundamental engineering principle to determine an optimal amount of brazing material for plating the vane in order to obtain an acceptable brazed product with the

Art Unit: 3742

minimum cost once it is taught by Lee or Kurokuzuhara to use vanes plated with a brazing material in a magnetron. It is obvious to an ordinary artisan that the exact amount must be a tradeoff between the cost as brazing materials like silver, are very expensive; and the quality of the brazing operation. Therefore, it would have been obvious to one of ordinary skill in the art to modify Lee or Kurokuzuhara to use just enough of the brazing material for a good brazing process in order to keep the cost at the minimum. The exact amount can be easily determined by an ordinary artisan through routine trial and error experimentation. The applicant has not provided any evidence showing why the exact depth would not have been an obvious engineering expediency or the claimed composition produces any unexpected criticality to the claimed magnetron structure.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 3742

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 472-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Philip H Leung". The signature is stylized with a large, looped "P" and a cursive "Leung".

Philip H Leung  
Primary Examiner  
Art Unit 3742

P.Leung/pl  
12-22-2005